



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## IMPROVEMENT IN EDUCATIONAL PRACTICE<sup>1</sup>

---

ERNEST C. MOORE  
Yale University

---

A little time ago the Sage Foundation of New York published a comparative study of public-school systems in the forty-eight states, an epitome of school facts in tabular and diagrammatic form of the greatest value to a general knowledge of educational conditions. The last page of this study gives the comparative rank of each of the forty-eight states as determined by ten educational features: the number of its children of school age who are in school, the value of its school plant, the actual expenditure per child, the aggregate school days per child in the state, the length of the school year, the average days of attendance per child, the relation of the state's expenditure for public education to its total wealth, the daily cost of the education given, the proportion of its pupils in high schools, and the average annual salary of the teachers in each state. It is, I think, safe to say that such a volume of information upon education has never before been compressed into so few pages or set forth in more lucid form.

It is interesting to ask, does this masterly statistical study tell the whole story of the condition of education in the United States? Does it indeed tell the most important part of it? Does it show the relative value of the schools? The heart of the school is the quality of its teaching. The figures are undoubtedly valuable for all that they set out to prove. They do not reveal the actual state and condition of education, though they do tell us a great deal about the conditions which surround it. A relatively low proportion of children of school age actually in school may, it is barely possible, represent a high degree of intelligence on the part of the parents of the non-attending children, for the main thing about a school system is what it does for its children when they come to

<sup>1</sup>Read at the meeting of the Harvard Teachers' Association, Cambridge, Massachusetts, March 15, 1913.

school. Expensive school plants may reflect merely a community's pride and desire to promote and advertise itself by erecting good public buildings. In the last analysis a school is a place not built with hands. Liberal expenditures for schools are not altogether incompatible with poor teaching. A long school year may represent a poor condition of instruction, a high average attendance may be due pretty largely to an efficient compulsory attendance department, a high proportionate expenditure for instruction may represent a community's pride or reckless wastefulness, for a thing is not necessarily good because it costs a great deal. It is rather apt to be bad for that reason. Relatively large numbers of students in secondary schools may be due to the presence of colleges or the absence of factories, and not guarantee that those who attend upon high-school instruction are being profitably educated. Those who are familiar with school affairs know that these are more than captious statements. The real school is behind all these appearances. The real educational welfare of the community persists in depending chiefly upon one thing—the kind and quality of the teaching which is given in the schools. Is there any one of these standards which measures and compares that? Each of them, if we could analyze it deeply enough, might be found to have a bearing upon that central fact and in some sense to proceed from it, but as they stand they do not give a satisfactorily clear report upon this most important matter.

But one of these standards reveals a great deal more about the state of the teaching, and therefore the quality and efficiency of the schools, than the others. That is the one which reports the salaries of the teachers, for it is just about as certain in teaching as in any other occupation that poor pay means poor hands and poor hands mean poor work. Indeed, it is rather more true, for real teaching is a kind of spiritual radiation which only a relatively healthy, enthusiastic, and achieving personality can give forth. The community or the state which places a low value upon the services of its teachers forces them as a body to hold their service cheap. But is the reverse true? Is a high rate of pay for teaching an infallible indication that the teaching is good wherever the pay is high? By no means. Some of the cities of the United

States which pay the highest salaries have poor teaching. Something must be added to good salaries to insure good teaching, even when only good teachers are employed to give instruction in the schools. The first of these necessary things is a good system of school administration, for a badly conceived plan of school management will breed distrust, feverish worry, and finally chaos, in the best teaching staff that can be assembled. Next after a wholesome and efficient plan of school administration comes good and inspiring leadership, and this is vastly important, for a good general will make an army out of poor material and will win victories with it, but a poor general will demoralize and prevent the best troops from winning a campaign. He contributes two things—*esprit de corps* and leadership. But right here our figure breaks down. The undertaking of the general and his troops is relatively simple. There cannot well be two views about the nature of their object, but in the ceaseless war which humanity is waging upon ignorance there are unfortunately many views as to what victory consists in, many counsels as to the form and substance of successful warfare, and no clear single battle cry. I conceive that one may be a good teacher, a good principal, or a good superintendent of schools in the commonly accepted sense of the term, and yet hold a philosophy of instruction and set before himself ideals of attainment and follow methods of procedure which make his daily work little short of atrocious. Perhaps in no other calling is the good so thoroughly the enemy of the best as it is in the calling of the teacher.

Mr. Chesterton has said that by far the most important thing for one to know about any man is the kind of philosophy he keeps. If a landlady is renting a room to a lodger, he says that the most important thing for her to know about him is not what his income is or his bank account is, but what his philosophy is; that when a general is about to fight a battle with an opposing army the most important thing for him to know about the army he is going to meet is not how big it is, nor who is in command, nor even what its plan of campaign is, but what kind of a philosophy is in the being of its soldiers. There can, I think, be no doubt of this. The most important thing at all times about any man is the kind of philosophy

he keeps. And by far the most important thing about any school system is the kind of philosophy of education which shapes the purposes and the activities of its constituent members.

Unfortunately there are many philosophies of education and most of them prevent what they undertake to accomplish. Any one who is in close touch with educational practice will agree that there are at least three different kinds of schools with three different kinds of philosophy determining their teaching. The first kind of school believes that the great thing is knowledge. A few learned and peculiarly fortunate adults have it, most haven't it, and children never have it save as it is given to them. It is stored up in books, in courses of study, in the minds of teachers and other learned folks. The business of education consists in taking knowledge from the places where it is and putting it into the places where it is not—the empty minds of children. Schools are retail stores of knowledge and universities exist to conduct a wholesale trade in it. The best books and the best courses of study have put it up in properly weighed packages and carefully prepared doses which must be taken, one kind after the other, at regular intervals until an education has been administered. Recitations must be held to find out whether or not the daily dose has been taken—memory must retain it. Curricula are required to indicate the quantity which can be compressed into the memory of a school child. That superintendents and principals may know that teachers and pupils are handling the required stint of it, that teachers and parents may know that pupils are stocking themselves with it and retaining it in undiminished state, and that the children themselves may know how much they know, examinations are held with great frequency and regularity and all that has been accomplished is weighed and measured by them. This is the knowledge conception of education and a school system which is devoted to it is called an examination system of schools. An old and honored gentleman of my acquaintance once told me of his own theological training at Princeton fifty years ago. "Every morning," he said, "the professor brought our meat to the classroom cut up into nicely prepared little chunks all of the same shape and size. Then he handed them to us to take and two days afterward he looked

into our stomachs to see that we were retaining them in just the same form in which he had given them to us."

There is a right wing of educational philosophers who have recoiled from the crudities of this practice and have set up in opposition to it a conception of education which forsooth has little to do with knowledge but exists solely to train the mind. The mind, they say, must be exercised and strengthened, the wit must be sharpened before it is ready for its real work. Nature never intended that any man should do any real thinking with so crude, ineffective, and blunt an instrument as a mind that had not first been patiently exercised, strengthened, and sharpened for its work. One must eat sand before he can digest. Mental exercise is the great thing in education. Its aim is the symmetrical development of all the powers of the mind. Education, to be of universal value, must not be concrete, for that would particularize or partialize it. It must not allow itself to be limited to any one content, for it aims to impart a mastery of all. It must therefore confine itself to elements which appear in all contents. The only elements of a genuinely universal sort are the forms or symbols of knowledge. The mind must therefore be exercised upon these. To train a thinker one must be very careful that his mind shall have to do not with thoughts but only with the forms of thought while it is being educated. This is insured only by a long period of contact with certain studies which contribute nothing of much value in themselves, but exercise upon which puts the mind through its paces, and inures it to great activity by means of a well-ordered series of exacting, uninteresting, and in themselves meaningless tasks. This is the disciplinary philosophy of education and the schools which express it are mental-exercise schools.

The third kind of school believes both in knowledge and in mental training. But for it they cannot be separated. Knowledge for it is no ready-made outside thing which by any conceivable legerdemain can be put inside the mind; on the other hand, the mind is not so constituted that it can take strength by being exercised upon the forms of knowledge. Men made knowledge by thinking and there is no part of the knowledge which they have made which is final and not open to improvement by the

same means. To get knowledge the student must do as its original discoverer did; he must rethink it, remake it. It makes no difference what Moses thought or Plato thought or Euclid thought, until I think their thoughts for myself as my own. Science, history, literature, mathematics, all must be born anew in the mind of each student who studies them. Books are of value, courses of study are of value, and teachers are of value, not because they do our thinking for us, or insert knowledge into our otherwise empty minds, but solely because they help us to know what matters the race has found it most profitable to think about and put us to work at thinking about them. As there are no exercises known to gymnastic teachers which train the body as a whole but only those combinations of muscles actually engaged in them, so these thinkers believe there are no mental exercises that train the mind as a whole but only the specific activities which are at work. Whatever mental training results is always a definite ability to repeat its functioning upon a similar content. In other words, the training which we are able to give our minds is always a relatively definite content training and never a general formal training.

Education, according to this school, has one sole object, the using of the mind, not the getting of knowledge but the making of knowledge; not the exercising of the mind, but the using of the mind. I have said that this is a contribution which philosophy makes to education. It is distinctly the province of philosophy to point out what its sound first principles are. The question, What is knowledge, or how is knowledge possible? has engaged its most critical attention. It has an answer to that question and its answer is that knowledge is not and cannot be a given, but must be a construction. It is also the duty of philosophy to explain the behavior of mind and to make clear under what conditions it functions. The debt of sound education to philosophy is great, but the debt of philosophy to education is even greater, for it was one of the first discoveries of philosophy that its mission is to heal the soul, that is, that philosophy exists for the sake of education, that its one function is to assist the mind to a proper guidance of itself.

Is there any pressing need that the lesson which philosophy

teaches concerning the nature of knowledge and the behavior of intelligence shall prevail in the schools? No need is greater. It, and it alone, will clear up the confusion in educational theory. The object of education, we are told, is morality. Other counsels insist that it is preparation for citizenship, others that it is culture, and still others that it is to fit men to make a living. But the prime object of education is none of these things, though its secondary object is all of them. Its prime object is to make people use their minds, and if they are constrained to use their minds they will inevitably use them on the greatest concerns of life, morality, citizenship, culture, and productive activity. Or if education seeks first the kingdom of the spirit, all things else will be added unto it.

Better teaching, as I conceive it, consists then in setting our faces resolutely to the goal of requiring our students to use their minds, not to exercise them but to use them, not to fill them with knowledge, but to use them in making it each for himself. This is an old doctrine. It was Socrates who made this discovery, but if we took it seriously today it would work a Copernican revolution in what we are doing. What would it do for the teaching of mathematics? Herbert Spencer dared to "doubt if one boy in five hundred . . . knows his Euclid otherwise than by rote." Does the proportion read the other way today? Yet Professor Young has pointed out that it is no more profitable or educative to commit the theorems and demonstrations of geometry than it is to commit the names in the city directory. Has our teaching of science, from which so much was expected, engendered the scientific mood in our students; does it lead to a scientific habit of mind; do those who pursue it acquire scientific method and learn to systematize knowledge, or do they instead merely learn a few facts which have been systematized? Professor Mann has announced his conviction that better results will not come from the teaching of physics until the teachers have a better philosophy of the teaching of that subject, and in the last number of *Science* he indicates quite clearly what he means by that. Take the venerable subject of Latin, which in the days of its larger functioning furnished such great and profitable opportunities to be active-minded to the



students who pursued it. It is my duty to see a good deal of high-school instruction, and what I have seen of the teaching of this study is not reassuring. I entered one classroom while the class was engaged upon that passage of the oration for Archias in which Cicero attempts to make the thoughts of his auditors rise to the nature of the poet's mission. To do so he quotes the words of "our" Ennius, author of the *Annals*, the father of Latin poetry—the poets are holy, for they seem, as it were, to be approved to us by a special gift and favor of the gods. I waited to hear what sort of a question the teacher would ask on such a passage as that, and it came: "Why is *videantur* in the subjunctive?" I went into another class in another school where they were reading the fourteenth chapter of that first book in which Caesar tells that the German chieftain Divico and his retainers came to a conference, and how Caesar addressed them, saying that they ought to be peaceable and give him hostages that they would be. Whereat the German chieftain arose and said that their fathers had taught them to receive and not to give hostages and he broke up the conference. I waited here for the question which the teacher would ask, for from that German love of liberty which would not submit to be crushed out by mighty Rome herself, much that we hold dear has come down to us, and there in that remote forest two mighty forces in civilization confronted each other for a moment and expressed their opposing ideals, and the question came: "What mood follows *uti*?" I went into another classroom in another school, where the students, who were beginning the Latin grammar, were engaged in writing a synopsis of the verb upon the blackboard. The work was going well, but one student attempted to write a perfect imperative form and that disturbed the peace of the occasion. When the teacher saw it, her reproof took the form, "You know that there is no such form in the book. You must follow your authority. Watch it closely and don't let this happen again," in place of calling attention to the impossibility of giving an order today to be carried out yesterday. Yet on the whole these were good teachers, who were doing the thing that was expected of them. Nothing so completely convinces one that what is wrong with our education is not the students nor yet the

studies which we attempt to teach, though some of them almost seem to have been chosen for their peculiar power to dull and stupefy the mind rather than their serviceability in interesting, occupying, and training the student who must pursue them. What is wrong is the teaching. It pursues the wrong methods, though the difference between a study pursued by wrong methods and the same study pursued by proper ones is the whole difference between perverting the mind and educating it. And it pursues the wrong methods because its philosophy of the meaning and function of the subject which is taught to the student is poor and mean. The case is not otherwise in the elementary school. We teach our pupils how to read but not to read. We teach them how to write without allowing them to desire to write well. They learn to perform the processes of arithmetic without comprehending their significance or the occasions for using them. We teach a schoolroom manipulation of language, called grammar, but it does not seem to reach beyond the schoolroom. Our geography tends to be an exercise with very confusing and difficult names, while history is a dry study which students commonly get by heart. How can we get better teaching of each of these studies save by remembering that there is not only a philosophy of instruction as a whole, but that there is a philosophy of each study, a body of considerations as to its meaning, the object to be sought in teaching it, the parts of it which are to be reduced to terms of habit and the parts of it which must abide in comprehension, and this philosophy of the subject or the course indicates the value of the subject to the pupil and reveals the method by which it must be presented?

We have been discussing the importance of weighing and measuring the results of instruction, of establishing standards of measurement and mathematically determining the uniformities of education, of making it an objectively valid science by introducing precision in the calculation of its causes and effects. All this is good and greatly to be desired, but there is danger that we shall overlook the fact that it is instrumental after all, that it is only a method of giving more exact definition to what we already know and do not take seriously enough to put into practice.

Mathematics will never tell us what the nature of knowledge is, though it will help us to find out whether we have it. It will never tell us the different ways in which the mind works, though it will tell us whether it is producing certain results. Mathematics will not tell us how to get *esprit de corps*, but it will help us to detect its presence. Just as the navigation of ships was made possible by the invention of the compass, and all the refinements of navigation which have since been developed have been built around that central discovery, so and not otherwise is it in education. Its central discovery is the self-activity of the student, that the one object and mode of education is through enabling him to use his own mind; and all else that can be known about education has for its object the application and the utilization of this principle. If each one of us could have a sort of Damascus road experience, or in some other way be converted to a sound philosophy of education, it would do for us exactly what it has done and is doing for that daily increasing company of men who from it have caught the glamor of the kind of teaching which ought to be and is to be because it ought to be; it would set us to work as it has set them to work, resolutely, at the task of clearing roads through the jungle of methods, courses of study, and profitless and uncertain educational practices and advice, for the self-active spirit to walk in.

There are two sides to human experience, a habit side and an accommodation side; or two means by which the human being maintains his adjustment; one is repetition and the other invention. If he depends upon either one of these alone his situation soon becomes perilous. Education as an art is not quick to improve itself; when it is not highly charged with theory, and is not keenly alive on the inventional side, it sinks into the dull automatism of habit and forgets the very thoughts which prompted it. Theory or thinking about its task rouses it to life again and sends it hot-foot in search of ways to improve its service. Education started in Greece with a great concern for theory. When it got as far west as Rome it lost its theory for the most part and lapsed into the automatism of an established institution. Since that time it has become conscious of its activity at times, but only locally and occasionally. There is therefore great promise in the present

world-wide movement of investigation to convert it into a science. But the greatest advantage of this movement will be its vitalizing effect upon educational practice. Hitherto the advance in theory has been real but it has been too sporadic effectively to quicken practice. Now that a renaissance of teaching is on, not only will it produce new results, but discoveries which have been far too much neglected will be brought to attention and put to work. Among them is the important rediscovery of the heuristic method which Professor Armstrong has been championing so valiantly in England, and Professor Young in the United States. Another is the laboratory method of teaching mathematics so skilfully employed by Professor Perry and authoritatively supported by Professor E. H. Moore. The largest outcome of all in the direction of method, according to Professor Henderson, is the use of the problem to educate the reason. If we employ the method of casting all that we would teach or study into the form of problems and of provoking our students to do the same, much is gained in making teaching a co-operative undertaking in finding; the mind is challenged, attention is focalized, work becomes definite and has an understandable purpose, searching is made necessary, valuing or selecting becomes the order of the day, what is found out and thought out is organized with reference to the problem, each student shapes and offers his contribution in his own words, and, above all, each is thinking for himself upon matters of common interest, which is the only valuable training of individuality. This life-giving method of using the mind in studying is clearly set forth in Professor McMurry's book, *How to Study*. No more effective contribution to better teaching has as yet been made.